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Characterisation of innovation adoption in Europe

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1. OBJECTIVES

The main aim of the present study is to provide a descriptive statistical analysis of the diffusion process at the EU level using indicators of innovation adoption that can be obtained from the information available in the Community Innovation Survey (CIS). Although we are also interested in knowing which is the innovation adoption process in the European Neighbouring Countries (ENCs) compared to that of the EU countries, the statistical information in CIS does not cover any of the ENCs. Therefore, since this task can not be tackled with the statistical information available, we will try to proxy for it doing a comparison between the innovation adoption processes followed in the core countries compared to that of the new member states.

2. SCIENTIFIC METHOD

In particular, we examine innovation adoption at the country level using the information contained in the CIS3, CIS4, CIS2006 and CIS2008. This way, we are able to highlight the dynamics of innovation adoption across EU member states for the different time spans of the CIS and with a differentiation between core EU countries and New Entrants. Based on the definition and measures of innovation adoption given in a previous working paper of this SEARCH project, this paper will characterize innovation adoption in Europe with two kinds of comparisons: nature innovation-based comparisons (product vs process innovation and collaboration vs acquisition of external technologies) will be analysed; and geographic comparisons (comparison across European countries with special emphasis made in the comparison between the behaviour of core European countries and Eastern countries).

3. MAIN RESULTS

For all the countries, the adoption rate is higher for process innovation (43% on average) than for product innovation (29% on average). This goes in line with innovation rate which is more process oriented (28 % of EU firms make process innovations whereas 24% perform product innovations). Such a result suggests that process innovations need interactions between the firm and its suppliers and/or clients to be successful. Moreover, process innovations are often the results of supplier or client needs. This would encourage cooperation or outsourcing strategies to develop this type of innovation.

The nature of innovation adoption can differ according to the way adoption occurs. In particular, adoption may result from adoption of external technologies but it also relies often on the joint production of innovation. This last pattern is more frequent than the first one. Cooperation activities are driving innovation adoption at the EU level while the acquisition of innovations from external innovators is a less important source of adoption of innovation (both process and product)

Generally speaking, countries which display the highest level of innovation are also those which show the highest adoption rate and conversely countries with weak capacity to innovate are also weak adopters. Thus, the complementary dynamics linking innovation and adoption seems to be at work. However exceptions exist which are certainly not to neglect if we are to understand how countries can react to European incentives.

The comparison between two waves of the CIS (2002-2004 and 2006-2008) shows that both process and product adoption based on cooperation decreases by 2 points of %. On the opposite, the acquisition of external technologies remains stable.

The general patterns of the level of innovation adoption do not present substantial differences between EU core countries and New Entrants for product and process innovations and they tend to follow the general rule of similar relative rates of adoption and innovation. However, some countries that have a specific position against this general rule include New Entrants such as Slovakia, Hungary and Latvia, with important adoption rates together with very low innovation rates. This is so because, as said before, the adoption levels do not seem to be very different among the two groups whereas the innovation levels are lower in the case of these New Entrants.

Accordingly, we could say that New Entrants in general tend to innovate less than core EU countries, but once they decide to do it, there is a high heterogeneity across countries in the level of adoption as well as in the way they adopt. In fact, among the countries that display high level of adoption compared to their innovative capacities we find mainly New Entrants.

4. POLICY VALUE-ADDED

In the Europe 2020 Strategy, the Member States and the European Commission recognised that increasing innovation is a key to respond to the challenge offered by globalisation and more specifically by the crisis. According to the Strategy, “The crisis has wiped out years of economic and social progress and exposed structural weaknesses in Europe’s economy. We need a strategy to help us come out stronger from the crisis and turn the EU into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion.” In order to get a smart growth, Europe 2020 puts forward a priority on developing an economy based on knowledge and innovation. When analysing the production of innovation, adoption comes as way of doing it.

In describing the innovation adoption process in the EU, we have obtained that countries which display the highest level of innovation are also those which show the highest adoption rate and conversely countries with weak capacity to innovate are also weak adopters. Thus, the complementary dynamics linking innovation and adoption seems to be at work. However exceptions exist which are certainly not to neglect if we are to understand how countries can react to European incentives. These exceptions are Luxemburg which displays low level of adoption compared to their innovative capacities, and Slovakia, Hungary and Latvia which have a very high rate of adoption compared to its rate of innovation.

In this last group of countries (Easter and Baltic countries), acting towards a better integration to the EU, using the policies oriented to reinforce the Internal Market may permit to increase their capacity to adopt innovation. We should underline however that such a policy might have no effect if it is not accompanied by actions aiming at reinforcing the own innovative potential of these countries in order to boost their absorptive capacity.

For all the countries, both in the core EU and for the New Members, the adoption rate is higher for process innovation than for product innovation which goes in line with innovation rate which is more process oriented. Such a result suggests that process innovations need interactions between the firm and its suppliers and/or clients to be successful. Moreover, process innovations are often the results of supplier or client needs. This would encourage cooperation or outsourcing strategies to develop this type of innovation.

The nature of innovation adoption can differ according to the way adoption occurs. In particular, adoption may result from adoption of external technologies but it also relies often on the joint production of innovation. This last pattern is more frequent than the first one. Cooperation activities are driving innovation adoption at the EU level while the acquisition of innovations from external innovators is a less important source of adoption of innovation (both process and product and both core EU and New Entrants).